UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/498,891	02/07/2000	Mika Rinne	297-009169-US(PAR)	9436

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EXAMINER
MOLINARI, MICHAEL J

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 01/28/2004   *(|*

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.		Applicant(s)
Office Action Summary	09/498,891		RINNE ET AL.
	Examiner		Art Unit
	Michael J Molinari		2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 January 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☒ All b)☐ Some * c)☐ None of:
   1.☒ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
   since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
   37 CFR 1.78.
   a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
   reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

Response to Arguments

1.   In view of the Appeal Brief filed on 2 January 2004, PROSECUTION IS HEREBY

REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following

two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37

CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a

supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or

other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

2.   Claims 1, 9-12, 14, 16, 18, and 20 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The words "certain" and "generally" render the claims

indefinite. Appropriate correction is required.

3.   Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. The language "defines in more detail a certain part of the first protocol layer

generally defined by said first element" is vague and indefinite because it is unclear as to what is

intended to be the claimed limitation.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1-2, 6, 8-10 and 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by

Stevens ("TCP/IP Illustrated, Volume 1").

3.   Referring to claim 1, Stevens discloses a method for transferring information over a data

connection according to a protocol stack where certain first protocol layers (Ethernet, which is a

link layer protocol, see Section 2.2, pages 21-23) and certain second protocol layers (IP, which is

a network layer protocol, see Section 2.2, pages 21-23) exist, comprising the steps of creating a

protocol identifier (Type field, see page 22, lines 25-27), determining a value for said protocol

identifier in accordance with the first protocol layers in said protocol stack (see Fig. 2.1, page 23,

and note that the IP datagram has one value (0800), the ARP request/reply has another (0806),

and the RARP request reply has yet a third (8035)), and signaling said protocol identifier to the

second protocol layers in said protocol stack (see Fig. 2.1, page 23, and note that the IP

datagram, which is passed on to the network layer, contains the type field that identifies it as an

IP packet).

4.   Referring to claim 2, Stevens discloses the steps of establishing a data connection

between a first communications apparatus and second communications apparatus (see Fig. 4.4,

page 58, and note the connection between the source (bsdi, see page 58, line 23) and a

destination (in this example, the destination address is ff:ff:ff:ff:ff:ff, which is a broadcast

address. However, looking at line 2 of Fig. 4 it can be seen that the message was received by

0:0:c0:c2:9b:26, which then replied). See also Figure 4.2 on page 55 which more clearly shows

the connection between the two devices), determining a value for said protocol identifier in said

first communications apparatus (see line 1 of Fig. 4 and note that the frame type field is "arp")

and delivering said protocol identifier from the first communications apparatus to the second

communications apparatus (Again, Fig. 4 shows that the frame was received by 0:0:c0:c2:9b:26,

who then replied).

5.   Referring to claim 6, Stevens discloses the step of delivering said protocol identifier over

said data connection (see Section 4.2, pages 54-56, and see Fig. 4.2).

6.   Referring to claim 8, Stevens discloses the step of delivering said protocol identifier in

conjunction with the opening of said data connection (see page 22, lines 24-30 and note that

every Ethernet frame contains the type field, including the frames that are used in establishing a

data connection using TCP/IP).

7.   Referring to claim 9, Stevens discloses the step of delivering said protocol identifier at a

certain stage after the opening of said data connection (see page 22, lines 24-30 and note that

every Ethernet frame contains the type field, so the protocol identifier is delivered at every state

of the data connection).

8.   Referring to claim 10, Stevens discloses the step of repeatedly delivering said protocol

identifier at certain intervals (see page 22, lines 24-30 and note that every Ethernet frame

contains the type field, so the protocol identifier is delivered with every packet, so that the

interval between packets is the same as the "certain interval" at which the identifier is sent).

9.   Referring to claim 14, Stevens discloses the step of placing said protocol identifier into a

protocol frame of a certain protocol layer together with certain data to be transferred (see page

22, lines 17-44 and see Fig. 2.1 on page 23).

10.   Referring to claim 15, Stevens discloses the step of placing said protocol identifier into a

field within a protocol frame which field is reserved for the protocol identifier (see page 22, lines

17-44 and see Fig. 2.1 on page 23).

11.   Referring to claim 16, Stevens discloses the step of placing said protocol identifier into a

field within a protocol frame of a certain logical link control protocol (see page 22, lines 17-44

and see Fig. 2.1 on page 23. The "certain logical link control protocol" is Ethernet).

12.   Referring to claim 17, Stevens discloses the step of determining a value for said protocol

identifier in accordance with the contents of the data transferred over said data connection (see

Fig. 2.1 on page 23 and note that the type of data contained in the Ethernet frame determines the

contents of the protocol identifier field – 0800 for an IP datagram, 0806 for an ARP

request/reply, or 8035 for a RARP request/reply).

13.   Referring to claim 18, Stevens discloses a communications apparatus arranged to transfer

information to another communications apparatus in accordance with a protocol stack

comprising certain first protocol layers (Ethernet, which is a physical/link layer protocol, see

Section 2.2, pages 21-23) and certain second protocol layers (TCP/IP, which is a

network/transport layer protocol, see Section 2.2, pages 21-23), comprising means for creating a

protocol identifier (Type field, see page 22, lines 25-27), means for determining the value of said

protocol identifier in accordance with the first protocol layers of said protocol stack (see Fig. 2.1,

page 23, and note that the IP datagram has one value (0800), the ARP request/reply has another

(0806), and the RARP request reply has yet a third (8035)), and means for signaling said

protocol identifier to the second protocol layers of said protocol stack in either said

communications apparatus itself or in said other communications apparatus (see Fig. 2.1, page

23, and note that the IP datagram, which is passed on to the network layer, contains the type field

that identifies it as an IP packet).

14.   Referring to claim 19, Stevens discloses a communications apparatus arranged to transfer

information from another communications apparatus in accordance with a protocol stack

comprising first (Ethernet, which is a physical/link layer protocol, see Section 2.2, pages 21-23)

and second protocol layers (TCP/IP, which is a network/transport layer protocol, see Section 2.2,

pages 21-23), comprising means for signaling to (see Section 4.2, pages 54-56) said second

protocol layers a protocol identifier the value of which is determined in accordance with the first

protocol layers of said protocol stack (see Fig. 2.1, page 23, and note that the IP datagram has

one value (0800), the ARP request/reply has another (0806), and the RARP request reply has yet

a third (8035)).

15.   Referring to claim 20, Stevens discloses a data communications system comprising a first

communications apparatus and second communications apparatus (see Fig. 4.2, page 55, which

shows 3 communication apparatuses, including one above and two below), means for

transferring information between said first and second communications apparatuses in

accordance with a protocol stack comprising certain first protocol layers (Ethernet, which is a

physical/link layer protocol, see Section 2.2, pages 21-23) and certain second protocol layers

(TCP/IP, which is a network/transport layer protocol, see Section 2.2, pages 21-23), at least in

the first communications apparatus means for creating a protocol identifier (Type field, see page

22, lines 25-27), at least in the first communications apparatus means for determining the value

of said protocol identifier in accordance with the first protocol layers of said protocol stack (see

Fig. 2.1, page 23, and note that the IP datagram has one value (0800), the ARP request/reply has

another (0806), and the RARP request reply has yet a third (8035)), and at least in the first

communications apparatus means for signaling said protocol identifier to the second protocol

layers of said protocol stack (see Fig. 4.2, apge 55).

16.   Claims 1, 7 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Amri

et al. (U.S. Patent No. 5,535,199).

17.   Referring to claim 1, Amri et al. disclose a method for transferring information over a

data connection according to a protocol stack (see Fig. 4) where certain first protocol layers

(TCP/IP) and certain second protocol layers (X.25) exist, comprising the steps of creating a

protocol identifier (see column 7, lines 57-61), determining a value for said protocol identifier in

accordance with the first protocol layers in said protocol stack (see column 7, lines 63-66) and

delivering said protocol identifier to the second protocol layers in said protocol stack (see

Figures 6A and 6B).

18.   Referring to claim 7, Amri et al. disclose the step of delivering said protocol identifier over a control connection which is different than said data connection (see column 4, lines 57-60).

19.   Referring to claim 11, Amri et al. disclose the steps of determining and delivering said protocol identifier more than once during said data connection (see column 7, lines 65-67 and column 8, lines 1-2), determining said protocol identifier at each time on the basis of a certain part of the first protocol layers (see column 7, lines 65-67 and column 8, lines 1-2 and note that the determination depends on whether compressed or uncompressed TCP/IP will be used), and choosing said part of the first protocol layers such that the chosen part is not identical at all instances of determination (see column 7, lines 65-67 and column 8, lines 1-5 and note that the compression scheme may or may not be agreed to).

20.   Referring to claim 12, Amri et al. disclose the steps of adapting said protocol identifier so as to comprise elements (each identifier is made up of 2 bytes, which are elements, see column 7, lines 65-66) and determining each element of said protocol identifier on the basis of a certain part of the first protocol layers (see column 7, lines 65-67 and column 8, lines 1-2 and note that the bytes are different depending on whether compressed or uncompressed TCP/IP will be used).

21.   Claims 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Gleeson et al. (U.S. Patent No. 5,446,736).

22.   Referring to claim 20, Gleeson discloses a data communications system comprising a first communications apparatus (STATION 1, see Fig. 4) and second communications apparatus (STATION 2, see Fig. 4), means for transferring information between said first and second communications apparatuses (see Fig. 4, #416) in accordance with a protocol stack (see Fig. 4

and note that each STATION comprises a protocol stack) comprising certain first protocol layers (Optimization Layer, see Fig. 9, #912) and certain second protocol layers (Wireless Network Access Protocol, see Fig. 9, #916), at least in the first communications apparatus means for creating a protocol identifier (Compression ID, see column 14, lines 34-38), at least in the first communications apparatus means for determining the value of said protocol identifier in accordance with the first protocol layers of said protocol stack (see column 14, lines 34-38), and at least in the first communications apparatus means for delivering said protocol identifier to the second protocol layers of said protocol stack (see column 14, lines 43-45).

23.   Referring to claim 21, Gleeson discloses that the first communications apparatus is a wireless terminal (Mobile Client Node, see column 15, lines 17-19) in a radio access network, that said means for transferring information is arranged to deliver said protocol identifier to the second communications apparatus (see column 15, lines 17-19), and that the second communications apparatus is a network element in said radio access network (Server Node, see column 15, lines 17-19).

24.   Referring to claim 22, Gleeson discloses that said means for transferring information is arranged to deliver said protocol identifier across a radio interface of a mobile network in a call control connection (see column 14, lines 4-7 and column 15, lines 17-19. Gleeson teaches including the Compression ID field in all PDUs, which would include management as well as regular data PDUs).

25.   Referring to claim 23, Gleeson discloses that the first communications apparatus is a network element in a radio access network (Server Node, see column 14, lines 43-45), that said means for transferring information is arranged to deliver said protocol identifier to the second

communications apparatus (see column 14, lines 43-45), and the second communications

apparatus is a wireless terminal in said radio access network (Mobile Client Node, see column

14, lines 43-45).

26.   Referring to claim 24, Gleeson discloses that said means for transferring information is

arranged to deliver said protocol identifier across a radio interface of a mobile network in a call

control connection (see column 14, lines 4-7 and lines 43-45. Gleeson teaches including the

Compression ID field in all PDUs, which would include management as well as regular data

PDUs).

Claim Rejections - 35 USC § 103

27.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

28.   Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens

("TCP/IP Illustrated, Volume 1").

29.   Referring to claim 3, Stevens discloses establishing a data connection between a first

communications apparatus and a second communications apparatus (see Fig. 4.4, page 58, and

note the connection between the source (bsdi, see page 58, line 23) and a destination (in this

example, the destination address is ff:ff:ff:ff:ff:ff, which is a broadcast address. However,

looking at line 2 of Fig. 4 it can be seen that the message was received by 0:0:c0:c2:9b:26, which

then replied). See also Figure 4.2 on page 55 which more clearly shows the connection between

the two devices) and determining a value for said protocol identifier in said first communications apparatus (see line 1 of Fig. 4 and note that the frame type field is "arp"). Stevens differs from claim 3 in that he fails to disclose the use of a third communications apparatus. However, the Examiner takes official notice that it is common in Ethernet networks to use a hub to connect a plurality of network devices that communicate to each other using the Ethernet protocol. The use of a hub has the advantage of simplifying the wiring in an Ethernet network. One skilled in the art would have recognized the advantage of using a hub in an Ethernet network. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of a hub in the Ethernet network of Stevens to achieve the advantage of simplifying the wiring plan in the Ethernet network. Because all signals that are sent and received by a device are transmitted via the hub, the use of a hub as a third communications device would necessarily include delivering the protocol identifier from the first (sending) apparatus to the third communications apparatus (the hub).

30.   Referring to claim 4, Stevens discloses the steps of establishing a data connection between a first communications apparatus and a second communications apparatus (see Fig. 4.4, page 58, and note the connection between the source (bsdi, see page 58, line 23) and a destination (in this example, the destination address is ff:ff:ff:ff:ff:ff, which is a broadcast address. However, looking at line 2 of Fig. 4 it can be seen that the message was received by 0:0:c0:c2:9b:26, which then replied). See also Figure 4.2 on page 55 which more clearly shows the connection between the two devices) and determining a value for said protocol identifier (see Fig. 4.4, line 2 and note that the frame type field is "arp"). Stevens differs from claim 4 in that he fails to disclose a third communications apparatus, through which the first two

communications apparatuses communicate. However, the Examiner takes official notice that the use of routers to enable two nodes in a network to communicate is well known in the art. The use of routers has the advantage of intelligently routing IP traffic through a complex network. One skilled in the art would have recognized the advantage of using routers in a network. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of routers into a network to achieve the advantage of intelligently routing IP traffic through a complex network. Because routers that use Ethernet interfaces must de-encapsulate and re-encapsulate the IP data contained in Ethernet frames, the router would necessarily need to determine the value for the frame type field of the Ethernet frame in the arp reply taught by Stevens, thus meeting the limitations that the protocol identifier is determined in said third apparatus and that the protocol identifier is delivered from said third apparatus to said first apparatus.
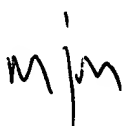
31.   Referring to claim 5, as explained in claim 4 above, the Examiner takes official notice that the use of routers in networks is well known in the art. Furthermore, routed networks where packets must traverse multiple routers between sending and receiving nodes are also well known in the art. At each router, the IP data must be de-encapsulated, routed, and re-encapsulated before being transmitted out the appropriate interface to the next node. It is during the re-encapsulation process that the protocol identifier (type field in the Ethernet frame) is determined. This field is delivered from each node to each successive node, in both directions. Therefore, such a network would necessarily require that the third and fourth apparatuses would determine protocol identifiers and deliver them to each other throughout the communication described by Stevens on pages 54-58.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael J Molinari whose telephone number is (703) 305-5742.

The examiner can normally be reached on Monday-Friday 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Michael Joseph Molinari

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